

CLAIMS

We claim:

1. A radio frequency identification (RFID) device, comprising:
a receiver circuit configured to receive a radio-frequency interrogation signal and to return a modulated radio frequency signal by continuous-wave backscatter, and a control circuit further configured to receive a disable signal and to process the disable signal to render the RFID device permanently inoperable.
2. The device of claim 1, wherein the receiver circuit is configured to provide passive continuous-wave backscattering of the interrogation signal and to receive operating power from the interrogation signal and the disable signal.
3. The device of claim 1, wherein the receiver circuit comprises an antenna circuit, and wherein the control circuit is configured to render the antenna circuit inoperable in response to the disable signal.
4. The device of claim 1, wherein the control circuit is configured to modify the backscattering characteristics of the antenna circuit in response to the disable signal.
5. The device of claim 1, wherein the receiver circuit comprises a memory circuit, and wherein the control circuit is configured to permanently alter the memory circuit in response to the disable signal.
6. The device of claim 1, wherein the control circuit is configured to fuse a fusible link in response to the disable signal.

7. The device of claim 1, wherein the control circuit is configured to irreversibly alter the operating characteristics of the receiver circuit in response to the disable signal.

8. A radio frequency identification (RFID) system, comprising:
an interrogator configured to generate a radio-frequency interrogation signal and a radio-frequency disable signal; and

a passive RFID tag configured to receive the interrogation signal and to return a modulated radio frequency signal via continuous-wave backscatter in response thereto, the RFID tag further comprising a control circuit configured to receive the disable signal and to process the disable signal to render the tag permanently inoperable.

9. The system of claim 8, wherein the tag comprises an antenna circuit configured to return the radio frequency signal and wherein the control circuit is configured to render the antenna circuit inoperable in response to the disable signal.

10. The circuit of claim 9, wherein the control circuit is configured to modify the backscatter characteristics of the antenna circuit in response to the disable signal.

11. The system of claim 9, wherein the control circuit is configured to irreversibly modify operating characteristics of the antenna circuit in response to the disable signal.

12. The system of claim 9, wherein the receiver circuit comprises a memory circuit, and the control circuit is configured to permanently alter the memory circuit in response to the disable signal.

13. The system of claim 12, wherein the control circuit is configured to erase the memory in response to the disable signal.

14. The system of claim 9, wherein the control circuit is configured to fuse a fusible link in the tag in response to the disable signal.

15. The system of claim 9, wherein the control circuit is configured to break an electrically conductive line in the tag in response to the disable signal.

16. A method for disabling a radio frequency identification (RFID) device, comprising:

transmitting a disable signal to the device;

receiving the disable signal at the device; and

processing the disable signal to render the device irreversibly non-responsive.

17. The method of claim 16, wherein processing the disable signal comprises altering a memory in the device.

18. The method of claim 17, wherein altering the memory comprises erasing the memory.

19. The method of claim 16, wherein processing the disable signal comprises fusing a fusible link in the device.

20. The method of claim 16, wherein processing the disable signal comprises changing the operating characteristics of the device.

21. The method of claim 16, wherein receiving and processing the disable signal comprises using power from the disable signal to render the device irreversibly non-responsive.

22. A radio frequency identification and control device for tracking and controlling an operable object in response to interrogation and control signals from a remote radio frequency identification (RFID) interrogator, the device comprising:

a receiver circuit formed inside the operable object and configured to receive the interrogation signals and return a modulated radio frequency signal by continuous-wave backscatter in response thereto, the receiver circuit adapted to be coupled to the object and to render the object inoperable in response to the disable signal.

23. The device of claim 22, wherein the receiver circuit is configured to render the receiver circuit and the object permanently inoperable in response to the disable signal.

24. The device of claim 23, wherein the receiver circuit is configured to return radio frequency signals in response to the interrogation signals that comprise data regarding the operational status of the object.

25. The device of claim 22, wherein the receiver circuit is configured to enable operation of the object in response to an enable signal from the remote RFID interrogator.

26. The device of claim 22, further comprising the operable object, and wherein the receiver circuit comprises a receiving antenna that at least a portion of which comprises the operable object.

27. The device of claim 22, wherein the receiver circuit comprises a receiving antenna that is formed entirely from the operable object.

28. The device of claim 22, wherein the receiver circuit comprises a passive circuit that is powered by the interrogation signals from the interrogator.

29. The device of claim 22, wherein the receiver circuit is battery-powered and comprises an active transmitter circuit.

30. A radio frequency identification and control system, comprising:
a weapon; and

a radio frequency identification (RFID) device formed internal to the weapon and coupled to the weapon, the RFID device configured to return a modulated continuous-wave backscattered radio frequency signal in response to remote interrogation signals and to control operation of the weapon in response to remote control signals.

31. The system of claim 30, comprising a remote interrogator configured to generate the interrogation signals and the control signals and to receive the return radio-frequency signals.

32. The system of claim 31, wherein the RFID device is configured to permanently disable the weapon in response to control signals from the interrogator.

33. The system of claim 31, wherein the RFID device is configured to enable operation of the weapon in response to control signals from the interrogator.

34. The system of claim 31, wherein the RFID device is configured to utilize the modulated continuous-wave backscattered radio frequency signals to transmit data regarding operational status of the weapon.

35. The system of claim 31, wherein the RFID device is battery powered and is configured to transmit signals to the interrogator.